City of San Diego
Development Services Department
Plan Review Division
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Building Newsletter 18-5

Unreinforced Masonry Foundation Walls

I. Design Standards

The following limitations shall apply to foundation stem walls constructed of unreinforced masonry:

A. The construction shall comply as solid masonry. Head joints must be solidly filled or open end block shall be used. All cells must be solid grouted. See Figures 1 and 2 below. Grout must comply with Section 2103.4 of the Uniform Building Code and UBC Standard No. 21-19.

B. Unreinforced masonry foundation walls have the following limitations:

1. Free-standing stem walls supporting crippled framing and not stabilized at the top are limited in height to three times the nominal thickness. See Figure 3.
2. Stem walls stabilized at the top by a frame floor system are limited in height to six times the nominal thickness. See Figure 4.
3. Height limitations defined by Section I, Item B above shall be measured from the top of the footing; backfill against stem walls shall not exceed 18 inches of retained earth (difference of finish grade elevation on each side of wall). See Figures 1, 2 and 5.

C. Minimum foundation wall thickness shall comply with the requirements of Table No. 18-I-D of the UBC. Nominal thickness of block may be used to satisfy these requirements.

II. Unusual Cases

The above design standards are generally acceptable. Unusual conditions of loading, however, may result in situations in which the above criteria are not applicable.

Figure 1/One-story restrained foundation with backfill

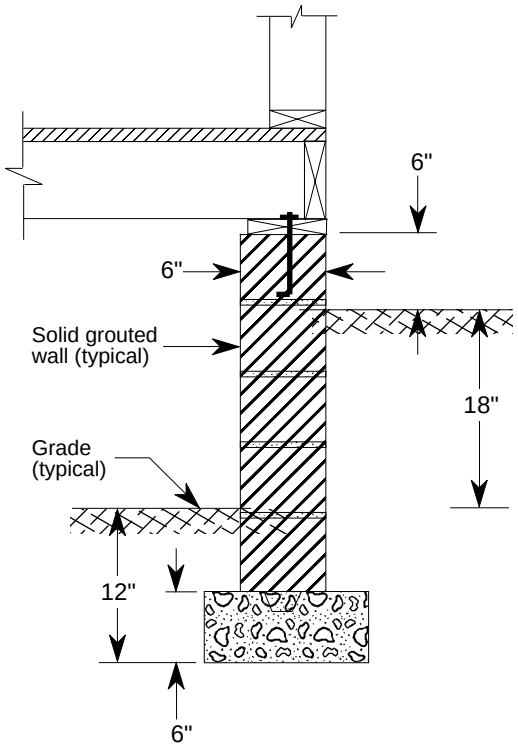

Figure 2/Two-story slab-on-grade foundation with backfill

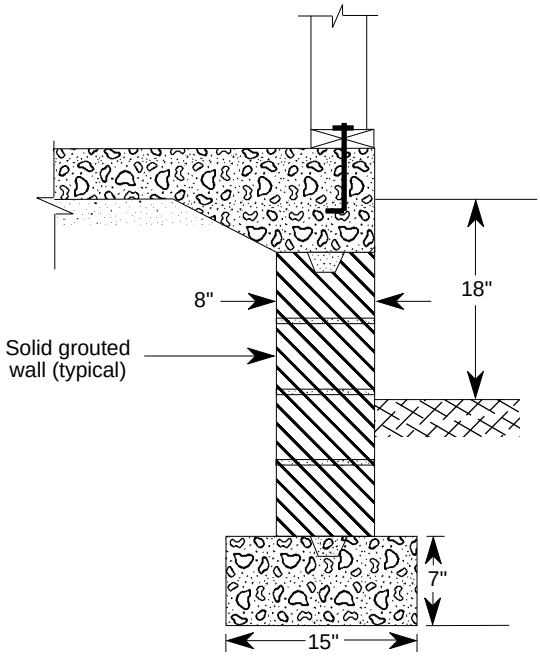

Figure 3/Free-standing stem wall

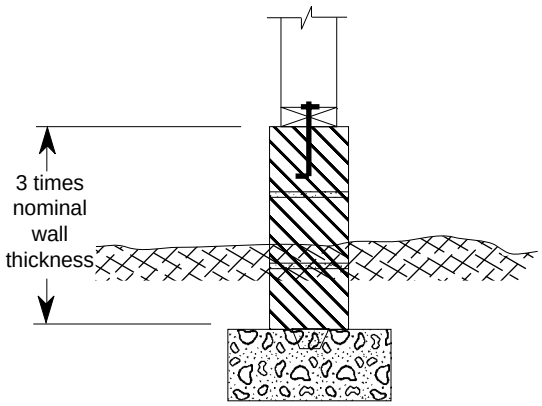

Figure 4/Restrained stem wall

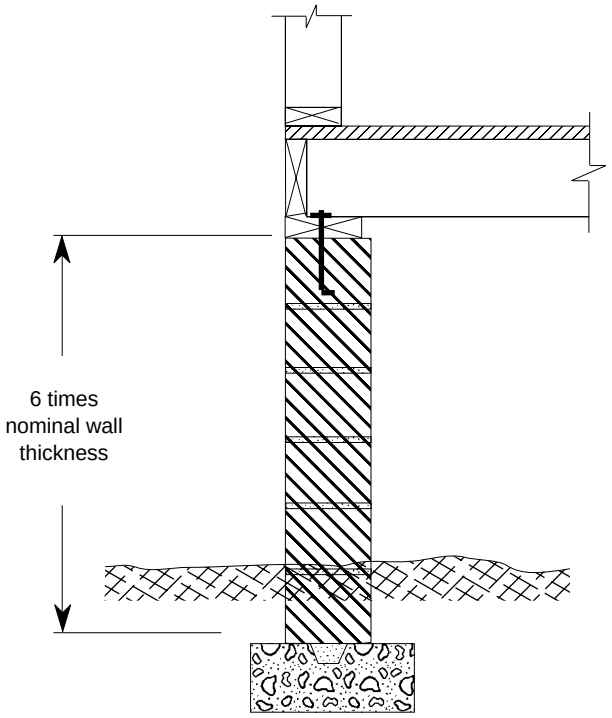

Figure 5/Backfill with free-standing stem wall